Protecting Our Mobility: An Overview of Alternatives

Larry Allen

North Carolinians have had a long love affair with the automobile. A drive along Interstate 40 between Greensboro and Raleigh or along Interstates 85 and 77 connecting Kannapolis to Rock Hill, South Carolina, clearly illustrates how highway congestion has caused the long "honeymoon" with our cars to wane. North Carolina's major highways are filling up. Planners and others have helped create this problem through plans, zoning regulations, and development ordinances. Using these same tools, planners must find ways to resolve growing transportation problems.

What is Transportation?

Simply defined, transportation is a means of conveyance or travel from one place to another. The quality of that transportation network has meant the difference between success and failure of commercial districts, corporate office centers and communities. Transportation should support the mobility needs of all of a community's citizens regardless of age, income or physical capacity. Transportation includes personal automobiles, bicycles, buses, rail, air and pedestrian modes of transportation. One of the basic responsibilities of transportation planning today is to promote and maximize transportation opportunities by developing a system which integrates all of these modes of travel.

The Problem: A North Carolina Context

North Carolina is no longer recognized solely for its contributions to agriculture, but is now among the leading states in medical and technological research and in tourism. Growth of these sectors of the economic base has put an increasing demand on the transportation infrastructure. Cities have grown from "farm markets" to major employment centers, some with populations of over 300,000.

The recent 1990 census figures estimate North Carolina to be the eighth most populous state in the United States. The American Association of State Highway and Transportation Officials (AASHTO) published a report entitled "Going and Growing: An Overview of the Relationship Between Transportation and Growth in America." This report details the impacts of congestion and warns that, ". . . in the absence of increased investments [to improve transportation facilities], [congestion] may get three to four times worse by the year 2020."[1] Yet communities expect both the accommodation of urban growth and the maintenance of their accustomed lifestyle of convenience, without the associated costs. Long known as the "Good Roads State," North Carolina is one of the few states on the East Coast where tolls are not used for public roads.

North Carolina's cities continue to develop in sprawling suburban patterns and residents drive considerable distances from home to work in an attempt to maintain the quiet, placid lifestyle for which the state has long been known. Citizens hope to pay lower taxes than in the urban areas, though the resulting costs to the infrastructure and to the environment are exorbitant. Those added trips have decreased the life of roads and increased carbon monoxide in the atmosphere to dangerous levels.

While North Carolina is frighteningly dependent on foreign fuels, the state's residents rely upon the "independence" of their private automobiles. The quality of North Carolina's future can no longer afford this style of living. The potential threats of oil-controlling nations and the recent Middle East conflict have forced planners, environmentalists and politicians to realize that everyone has contributed to this prob-

Larry Allen is principal transportation planner with the City-County Planning Board of Forsyth County and Winston-Salem, North Carolina. He received a bachelor of science degree in community and regional planning in 1983 from Iowa State University and a master of arts degree in urban and regional planning in 1985 from the University of Iowa.

lem. With diminishing financial resources and a deteriorating transportation infrastructure, how can North Carolina face the multi-faceted challenge of preserving mobility? This will require the cooperation of everyone to solve, but how?

The beginning of peak-hour traffic delays at the Hawthorne curve on Interstate 40 in Winston-Salem.

Changing Our Ways

First, planners' attitudes and recommendations regarding transportation and land use must evolve. Recently, a greater emphasis has been placed on the relationship between transportation and the built environment. The size and density of projects and the degree to which land uses are segregated or commingled are closely related to the types of transportation modes that are recommended. Planners must recognize that decisions to allow large new residential developments in the hinterlands is a decision to increase traffic on already worn roadways and to further pollute existing neighborhoods and communities in their path to reach the employment centers.

In response to the negative environmental impacts caused by traffic congestion, the federal Clean Air Act Amendment of 1990 was ratified. It contains stringent, rigorously defined legislative mandates for addressing air quality and transportation issues. The Clean Air Act has an immediate and profound effect on transportation plans and programs in areas which have not met National Ambient Air Quality Standards for carbon monoxide, ozone and particulate matter. Congress has mandated that any projects built with federal funds or with approval from the U.S. DOT, must originate from transportation programs that are in conformity with the state implementation plan. The Clean Air Act will force planners to rethink the way people and goods should be transported. Widening roads may not always be an option. In San Francisco, the courts recently stopped the reconstruction of a road project based on the directive of the Clean Air Act. Various regions within North Carolina will likewise be forced to reduce the carbon monoxide and ozone emission levels.

Promoting multi-modal transportation would contribute strongly to reducing traffic congestion. This requires changing public attitudes. Put simply, North Carolinians need to stop driving so much.

There are other daily opportunities for planners to positively shape future mobility. Some of the solutions may be within the local scope of the comprehensive plan. What does the plan really say? One way to check the effectiveness of the comprehensive plan is to simulate build-out. The growth management element, economic development element and transportation element should support each other.

Reviewing Site Plans for Pedestrian and Transit Friendliness

Site planning and review processes in urban areas should provide for the needs of pedestrians by requiring sidewalks and/or greenways as essential parts of transportation systems. When approving site plans, the promotion of safety for the pedestrian should be paramount. Sidewalks and/or greenways help to decrease vehicle trips by promoting the lost custom of walking.

Since many of the corporate office parks are developed as planned unit developments, it is possible to encourage the developer to configure the structures closer to the street network so that offices may be served by public transportation. Pull-out bays, transit shelters, and wider intersection

Peak use of public transit in downtown Winston-Salem illustrates the need for amenities such as transit shelters.

Infill housing on the periphery of downtown Winston-Salem results in higher land use densities that help to make the provision of public transit more feasible.

radii can be required during this process. The local transit development plan can be used as the basis for requesting these amenities and design standards.

Parking Management Strategies

The current abundance of free or low-cost parking is one of the greatest deterrents to public or shared transportation. Some parking is needed, but the abundance of low-cost parking promotes automobile use by reducing the cost of driving. Parking management strategies can reduce single-occupant driving at specific employment sites, thereby improving environmental quality in urban areas. It is possible to invoke such strategies through development ordinances by requiring a maximum number of parking spaces instead of a minimum number. Before the construction of major commercial buildings, employers who agree to provide preferential parking spaces for vanpools and carpools should be given a reduction in the number of parking spaces required during the site planning process.

Development Configuration to Accommodate Public Transit

The configuration of many developments can hinder the efficient provision of transit service. The *Greensboro Transit Service Plan* acknowledged that:

> . . . growing employment [to] the west of the city and near the airport provides a particular challenge for transit services. Although the number of employees in this area is large and growing, the area is difficult to serve by transit. The office and industrial buildings in which people work have been sited in ways that do not easily accommodate transit. Buildings are far apart and typically set back from the road. As a result, buses would either have to make many long diversions to building entrances, or serve bus stops that are distant from those buildings.[2]

Review of site plans for corporate office parks, residential subdivisions, apartment complexes and institutional facilities, such as nursing homes, should include a review of the accessibility of the site to public transportation.

Land Use Plans

Planners should consider the degree to which new development can accommodate public transit during the preparation of plans for future growth. A successful system which offers several modes of transit depends upon a diverse and compact mix of land uses. Land uses influence the amount of ridership and determine the types of transit trips taken and the days of the week and times of the day of these trips. For example, office employees who work business hours have different travel requirements than hospital employees who work rotating shifts.

Transit works best when an appropriately high development density along a linear corridor is established. The Charlotte Department of Transportation completed the *Charlotte 2005 Transportation Plan: Transit Corridor Study* in 1989. The study assessed the long-term feasibility and demand for capital-intensive guideway transit in eight radial corridors within the city of Charlotte and Mecklenburg County. The study concluded that:

> . . . while guideway transit shows some promise in certain corridors, the land-use patterns and densities in the 2005 Generalized Land Plan generally do not support this concept of transit service. If light rail transit or any form of guideway transit is pursued in the future, the reshaping of development plans and policies to support higher-density corridor development and a strong Uptown area [Central Business District] must be an integral part of such an effort.[3]

For example, the best location to provide express bus service is between major traffic-generating land uses with a

Vanpools offer commuters an alternative to the private automobile.

balance of residential areas and employment centers. Many municipalities within this state and nationally are experimenting with the concept of activity centers. Although activity centers may specialize in certain types of land use (for example, a major medical complex), most activity centers integrate employment, residential and commercial uses. The concept of activity centers is a rediscovery of the Garden City and New Town-in-Town approach to planning. Activity centers will probably become an answer for reducing the vehicle miles of travel, thereby improving air quality.

Removing the Stigma From Public Transportation

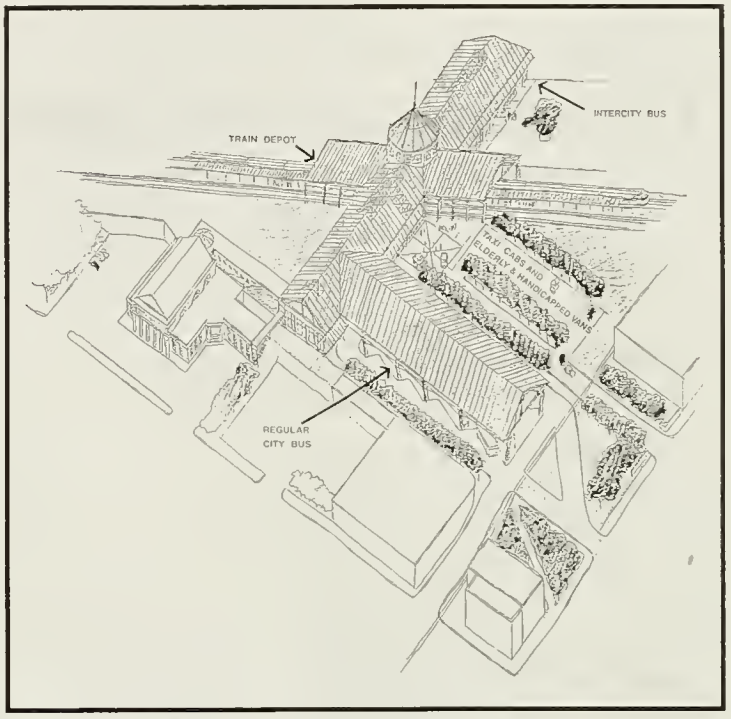
Planners should be at the forefront of removing the stigma which encourages the notion that public transportation is primarily for use by citizens of certain socio-economic backgrounds, age groups, or for the handicapped. As part of the transportation network, planners should advocate public transit as a viable alternative to the automobile for all people. Public transportation is not restricted to public buses but includes carpools, shared and exclusive right-of-way transit, such as High Occupancy Vehicle (HOV) lanes on highways, transitways, commuter rail, light rail and heavy rail.

Federal, State and Local Initiatives

President Bush recently introduced a five-year, $105 billion proposal to increase spending on highways and transit nationwide. The president's plan calls for the widening of existing roadway facilities instead of building an abundance of new facilities. Across the country, new strategies for combatting congestion are being developed, such as the use of telecommunications and intelligent vehicle/highway systems. The purpose of the intelligent vehicle/highway system is to decrease the distance safely needed between vehicles sharing a roadway and to help motorists avoid congested areas. Telecommuting would allow employees to remain at home by enabling them to transfer work to their offices via computer modem.

In North Carolina, the state's Department of Transportation has proposed to acquire and restore railroad corridors within the state. The city of Greensboro recently acquired the public transit system from Duke Power Company and has proceeded to build the first multi-modal transit center in North Carolina. It will house intercity bus service and the Carolinian Commuter Rail Service, which provides daily rail service between Rocky Mount and Charlotte, N.C.

In the Triangle, the Land Use Subcommittee of the Joint Greater Raleigh-Durham-Chapel Hill-Carrboro Transportation Advisory Committee recently completed the *Transit and Land Use Study* as part of its regional mobility initiatives. In the Triad, the Joint Transportation Advisory Committee of Greensboro, High Point and Winston-Salem urban areas meet routinely to address transportation issues of regional concern. They hosted a conference entitled "Air Quality in the Carolinas" in June 1991.



Proposed multimodal transit center for the city of Greensboro.

Shaping the Future

Communication and coordination among the various planning disciplines, including land use, transportation and environmental planning, must be maintained. The police powers, conferred to planners by the state to protect the health, safety and welfare of citizens in communities, provide the foundation that makes planners responsible for evaluating all the possible alternatives for protecting mobility--a necessity for economic livelihood.

Our love affair with the automobile must come to an end. Our roads require it. Our budget resources demand it. The quality of our air compels it. Planning must be a part of the solution rather than an excuse for the problem. □

Notes

1. American Association of State Highway and Transportation Officials. "AASHTO Reports on Transportation Investments vs. Economic Growth." *The Urban Transportation Monitor.* Lawley Publication, December 1990.
2. Barton-Aschman Associates, Inc. *Greensboro Transit Service Plan.* City of Greensboro, North Carolina, 1990.
3. Charlotte Department of Transportation and Barton-Aschman Associates, Inc. *Charlotte 2005 Transportation Plan: Transit Corridors Study.* 1989.

References

American Public Transit Association. *Building Better Communities, Coordinating Land Use and Transit Planning.* 1989.

Barton-Aschman Associates, Inc. with Hammer Siler George Associates. *Research Triangle Regional Transit/Land Use Study.* September 1990.